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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,182	12/08/2003	Colin McCullough	55797US015	2896

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3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER	
SAVAGE, JASON L	
ART UNIT	**PAPER NUMBER**
1775	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,182	MCCULLOUGH ET AL.	
	Examiner	Art Unit	
	Jason L Savage	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *45-48 and 50-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *45-48 and 50-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 45-48 and 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sowman (US 3,795,524).

Sowman teaches fibers, films, flakes, and microspheres of novel aluminum borate or aluminum borosilicate compositions (col. 1, ln. 13-24). Sowman teaches that aluminum borosilicate fibers can be made which are continuous in length, strong, glossy, having a high moduli of elasticity (col. 2, ln. 8-23). Sowman does not exemplify an embodiment wherein the continuous fibers are disposed in an aluminum matrix; however, it does teach that the continuous fibers may be advantageously used in metal matrix composites including aluminum matrix composites due to their thermal stability, strength, flexibility and other properties (col. 13, ln. 11-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the continuous fibers of Sowman in an aluminum matrix composite since it is specifically stated as a suitable use by the reference.

Regarding the limitation that the aluminum matrix composite be a wire or a cable, Sowman teaches that the fibers may be formed into a continuous strand, tow, yarn or

other multifiber article (col. 2, ln. 47-64). A continuous strand coated with the aluminum matrix metal taught by Sowman would meet the limitation of being a wire or cable. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the aluminum matrix metal on a fibrous tow in order to help keep the fibers in the tow bonded together.

Sowman is silent to the composite cable or wire have a modulus and average tensile strength within the ranges claimed by Applicant in claims 45-46 and 51. However, Sowman states that the aluminum borosilicate continuous fibers may have a modulus of elasticity between 48-241 GPa and a tensile strength between 551-2413 MPA (col. 9, ln. 48-68) which is similar to the modulus and tensile strengths for the fibers used in the present invention which is disclosed on page 11, line 5-10 of the specification. Sowman also teaches that increasing the amount of SiO_2 in the fiber will decrease the modulus of elasticity as well as other properties of the fiber (col. 9, ln. 55-59). Furthermore, Applicant recites on page 3, lines 10-19 of the specification that a preferred embodiment of the invention that exhibits the claimed wire or cable modulus and average tensile strength employs aluminum borosilicate fibers having specific ranges of Al_2O_3, SiO_2, and B_2O_3. Sowman teaches multiple embodiments which overlap the ranges of Al_2O_3, SiO_2, and B_2O_3 in the fibers such as the fibers of Examples 1-6, 8-10 and 12-17.

It is the position of the Examiner that since Sowman uses fibers having similar modulus of elasticity and average tensile strengths and composition as the fibers of Applicant,

the wire or cable of Sowman having the fibers embedded in an aluminum matrix would also exhibit a similar modulus and average tensile strength as the claimed product. The Patent and Trademark Office can require Applicant to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on Applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, In re Best, Bolton, and Shaw, 195 U.S.P.Q. 431 (CCPA 1977).

Regarding claims 47-48 and 52-54, Sowman teaches that the continuous fibers may have a modulus of elasticity and average tensile strength which overlap the claimed ranges (col. 9, ln. 48-68).

Regarding claim 50, Sowman is silent to the electrical conductivity of the wire, however, given that Sowman uses fiber compositions having the same compositions of applicant which are embedded in an aluminum matrix, it would be reasonable to expect the wire of Sowman to have a similar electrical conductivity to the wire claimed by Applicant.

Response to Arguments

Applicant's arguments filed 6-23-04 have been fully considered but they are not persuasive.

Applicant argues that the reference of Sowman cannot support a case of *prima facie* obviousness as to the claims since Sowman fails to address the modulus of the wire. Applicant asserts that since Sowman does not disclose a modulus of the wire, there could be no reasonable expectation of success of obtaining a wire having these properties. Applicant also discounts the Examiner's assertion that the modulus in the composite of Sowman would be similar since nothing in Sowman teaches or suggests this.

However, even though the reference is silent to the modulus of the wire, it would be reasonable to assume the modulus and other properties of the wire would be similar to that claimed by Applicant since Sowman teaches wires having the same matrix material and the same continuous aluminum borosilicate fibers having similar properties to the aluminum borosilicate fibers used by Applicant in the wire. Applicant has not provided any factual evidence to show the wire of Sowman would not have the claimed properties. The mere assertion that the properties may not be the same is not considered factual evidence.

Applicant further argues that there could be many interpretations of the teachings of Sowman and that one such interpretation could be that the entire tow could have a metal sheath around it with significant void volume contained therein which would not necessarily have the recited properties because of the presence of the voids. Since Sowman teaches a metal matrix composite, it is wholly unclear how one of ordinary skill in the art could interpret that teaching to be a tow of wires having a metal sheath around

it. As stated previously, Applicant's assertion that Sowman may not necessarily have the same properties is not considered proof of such.

Applicant further argues that Sowman does not provide sufficient detail to teach one of ordinary skill in the art how to obtain the claimed wire or cable with the recited properties. Applicant cites a portion of the specification which states that the processing speed can minimize the occurrence of reactions between the fiber and the matrix. Applicant further states that the occurrence of such a reaction affects various properties of the composite. While the occurrence of such a reaction may affect some of the properties of the wire, Applicant has not shown that the modulus is one of the properties that may be adversely affected. Should Applicant demonstrate that the faster processing speeds were critical to obtaining a wire having the claimed modulus and tensile strength, it would serve as a strong indication that the wire of Sowman may not have the claimed material properties. However, applicant's assertion that some properties may be affected is not proof that the modulus of Sowman's wire would not be within the claimed range.

Applicant submits that the Examiner's reasoning is akin to an inherency argument but argues that such reasoning is inapplicable in an obviousness rejection. This argument is not persuasive since inherency is still applicable despite the obviousness rejection. As was set forth above, one of ordinary skill would reasonably expect that a wire comprising fibers having the same composition and properties which is embedded in the same metal matrix material would have the same properties of the wire claimed by Applicant.

Applicant argues that inherency is present only if there is at least a reasonable likelihood that one of skill in the art could have discovered or recognized it without specific guidance. The mere recitation of a newly discovered function or property, inherently possessed by things in the prior art does not cause a claim drawn to distinguish over the prior art. Since the alleged distinction between applicants' claims and the applied art is recited in the functional language, it is incumbent upon applicants to show that the article disclosed by the reference does not actually possess such characteristics, *In re Swinehart*, 169 USPQ 226 (CCPA 1971); *In re Ludtke*, 169 USPQ 563 (CCPA 1971).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry to this communication or earlier communications from the Examiner should be directed to Jason Savage, whose telephone number is (571)272-1542. The Examiner can normally be reached Monday to Friday from 6:30 AM to 4:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on (571)272-1535.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Savage

8-31-04

DEBORAH JONES
SUPERVISORY PATENT EXAMINER